

# Automated Print Quality Analysis System



The IAS-2000DF, a flat-bed scanner-based system, is built on QEA's IASLab® software, a powerful general-purpose image analysis platform designed for a broad range of applications.

The system is used to quantify the image quality of printed output of all kinds, typically in a production environment. It analyzes prints made by any printing technology.

A comprehensive suite of image analysis tools, applying ISO standards wherever appropriate, ensures reliable, repeatable results.

The IAS-2000DF has two modes of operation: Interactive (expert) mode for R&D and test sequence design, and Automated (operator) mode for optimal productivity in routine testing.

The image-capturing device is typically a flat-bed scanner, which can be configured with or without an automatic document feeder. (A variant of the system, the IAS-2000DP, uses a high-speed, high-resolution production scanner.)

Saved images can also be analyzed. Images can be in any of a variety of formats including BMP, JPEG, GIF, TIF, PNG and ICO (PDF is optional) and from any source, including digital cameras.

*Quality by design.*

*Do it right the first time.*

**QEA makes them a reality.**

## IAS®-2000DF

**The IAS-2000DF toolkit** An array of basic and advanced tools perform:

- dot (blob), line, and area analyses, fundamental to nearly every print analysis application
- tone reproduction (tone reproduction curve, optical density and Dmax measurements, density consistency and stability)
- color analysis (color accuracy, consistency and stability, gray balance, color gamut)
- sharpness and detail (line and dot quality, bleed, dot gain, text and barcode quality, resolution, modulation transfer, spatial frequency response)
- image noise and print defects (color registration, print uniformity including banding, streaking, graininess mottle, wrinkle, missing prints, voids, background, and more)

**Flexible design** Flexibility is built in:

- The IAS-2000DF can be configured for high-speed production QC or high-res R&D
- accommodates new software tools

**Interactive or Automated operation** Two modes of operation—Interactive and Automated—make this flexible system ideal for both R&D applications and for optimal efficiency and productivity in production environments. Expert users working in Interactive mode specify test parameters: regions of interest, analysis settings, results to display on the monitor, and data to report to a database or text file.

Expert users develop programmed test sequences of any level of complexity, to be run on any number of samples.

Programmed sequences are typically run in Automated mode by operators doing routine testing on batches of samples.

Different areas of a test target can be scanned at different resolutions in the same test sequence, enabling precise analysis without sacrificing processing efficiency.

**Scanner compatibility** The IASLab software integrates smoothly with many different scanners thanks to a TWAIN device driver.

**No more guesswork** The IAS-2000DF delivers consistent, quantitative, operator-independent measurements—quickly, reliably and repeatably.



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# IAS-2000DF<sup>®</sup>

System Specifications\*\*

## FUNCTIONS AND FEATURES

- Automated or interactive analyses with IASLab<sup>®</sup>, the IAS-2000DF's advanced image quality analysis software platform
- Analysis of real-time or saved images in a wide range of image file formats
- Test sequence programming with a graphical user interface
- All measurements in calibrated, physical units including spatial dimensions, reflectance, optical density and color
- Numerical results output to database or text file and images to bitmaps
- User-selectable results formats; zoom and color channel display
- TWAIN scanner interface for image capture
- Single-side or duplex scanning

## ANALYSIS TOOLS AND ATTRIBUTES

- Dot (blob) and halftone quality analysis (size, shape, x-y locations, line screen, dot%, and screen angle)
- Line, edge, and text quality analysis (line width, blurriness, raggedness, density, contrast, fill, location, and orientation; line attributes analyzed per ISO-13660 where applicable)
- Solid area attribute measurements (density, reflectance, L\*a\*b\*, tone reproduction, gradient, graininess, mottle and background; area attributes analyzed per ISO-13660 where applicable)
- Noise Power Spectrum (NPS) and Banding (power spectrum with Visual Transfer Function filtering)
- Spatial Frequency Response (SFR or MTF) using the Slant Edge method per ISO-12233
- Histogram, Profile, Coverage and Background tools available in the software
- Barcode tool for reading information stored in the sample (available as option)
- Point-to-point distance and angle measurements

## TYPICAL APPLICATIONS

For prints produced by digital or other printing technologies:

- Research and development
- Process development
- Quality control
- Diagnostics and problem-solving
- Quality management

## SYSTEM COMPONENTS (QEA-SUPPLIED)

- IASLab control software
- Calibration targets
- All necessary cables and connectors
- Scanner (high-speed production scanner or flatbed scanner with or without automatic document feeder)

## MINIMUM PC REQUIREMENTS (CUSTOMER-SUPPLIED)

- PC running Windows<sup>®</sup> 7 to 10, 64-bit (with Microsoft Office Professional<sup>®</sup> including Excel 2007 and Access 2007, recommended)
- RAM: 8GB or more
- CD-ROM drive
- Two USB 2.0 ports

## ELECTRICAL REQUIREMENTS

- 110 Vac±10% @ 50/60 Hz or 230 Vac±10% @ 50/60 Hz

## OPERATING ENVIRONMENT

- Temperature: 10 to 32 C (50 to 90 F)
- Relative humidity: 20% to 80% (non-condensing)

## DOCUMENTATION

- Quick Start Guide
- User's Guide

\*\* Specifications subject to change without notice. Rev. 160223



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